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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/629,101	07/28/2003	Tinku Acharya	42P8760C	6372

7590 11/04/2005

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EXAMINER

COUSO, JOSE L

ART UNIT	PAPER NUMBER
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2621

DATE MAILED: 11/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/629,101	Applicant(s) ACHARYA ET AL.	
	Examiner Jose L. Couso	Art Unit 2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 July 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 23-40 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 23, 24 and 26-40 is/are rejected.
- 7) ☒ Claim(s) 25 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>2/3/04</u> . | 6) <input type="checkbox"/> Other: _____ |

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1. Claims 27 and 35 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 27 recites "wherein the gray scale variation in each quadrant is measured" which has no antecedent basis. Claim 23 from which claim 27 depends does not recite a gray scale variation.

Claim 35 recites "applying (c) and (d)" but there is no mention of steps (c) and (d) in independent claim 33 from which claim 35 depends.

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. Claims 33-40 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claims 33-40 are drawn to functional descriptive material NOT claimed as residing on a computer readable medium. MPEP.2106.IV.B.1(a) (Functional Descriptive Material) states:

"Data structures not claimed as embodied in a computer-readable medium are descriptive material per se and are not statutory because they are not capable of causing functional change in the computer."

"Such claimed data structures do not define any structural or functional interrelationships between the data structure and other claimed aspects of the invention which permit the data structure's functionality to be realized."

Claims 33-40, while defining a storage medium having thereon instructions, does not define a "computer-readable medium" and is thus non-statutory for that reasons. A

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storage medium can range from paper on which the program is written, to a program simply contemplated and memorized by a person. The examiner suggests amending the claim to embody the program on "computer-readable medium" in order to make the claim statutory.

"In contrast, a claimed computer-readable medium encoded with the data structure defines structural and functional interrelationships between the data structure and the computer software and hardware components which permit the data structure's functionality to be realized, and is thus statutory." - MPEP 2106.IV.B.1(a)

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 23-24, 26-27-34 and 36-40 are rejected under 35 U.S.C. 102(b) as being anticipated by Barnsley et al. (U.S. Patent No. 5,347,600).

With regard to claim 23, Barnsley ('600) describes a) dividing an image into quadrants (refer for example to column 19, lines 50-54); b) determining whether any quadrants can be estimated using a contractive map of the image; and if not, recursively applying a) and b) to the particular one or more quadrants that cannot be estimated by a contractive map of the image (see figure 25, element 404 and refer for example to column 19, lines 55-57).

As to claim 24, Barnsley ('600) describes measuring the gray scale variation in each quadrant so that each quadrant is either a low variation quadrant or a high variation quadrant (refer for example to column 19, line 66 through column 20, line 13).

In regard to claim 26, Barnsley ('600) describes wherein the gray scale values comprise the intensity image component of a color image (refer for example to column 19, lines 44-49).

With regard to claim 27, Barnsley ('600) describes wherein the gray scale variation in each quadrant is measured using the statistical variance of the gray values in the particular quadrant (refer for example to column 32, lines 31-43).

As to claim 28, Barnsley ('600) describes wherein a low variation quadrant has a statistical variance below a predetermined threshold value and a high variation quadrant has a statistical variance above or equal to the predetermined threshold (refer for example to column 18, lines 11-13 and 51-68).

In regard to claim 29, Barnsley ('600) describes wherein a low variation quadrant has a statistical variance below or equal to a predetermined threshold value and a high variation quadrant has a statistical variance above the predetermined threshold (refer for example to column 18, lines 11-13 and 51-68).

With regard to claim 30, Barnsley ('600) describes wherein the estimate of the particular low variation quadrant comprises the statistical mean of the gray scale values in the particular quadrant (refer for example to column 32, lines 31-43, the average pixel value in Barnsley is the equivalent of applicant's statistical mean of the gray scale values).

As to claim 31, Barnsley ('600) describes wherein the contractive map comprises applying a two-by-two spatial summing filter (see figure 9 and refer for example to column 11, line 24 through column 12, line 59, this portion of the Barnsley reference discusses a two-by-two block comparator which calculates a distance between pixel points, this "Manhattan" distance comparison is equivalent to applicant's spatial summing filter).

In regard to claim 32, Barnsley ('600) describes wherein the high variation quadrant is estimated using a scalar multiple of the contractive map of the image (refer for example to column 20, lines 14-41).

With regard to claim 33, Barnsley ('600) describes a) dividing an image into quadrants (see for example figure 1 and refer for example to column 8, lines 48-51); b) determining whether any high variation quadrants can be estimated using a contractive map of the image; and if not, applying a) and b) to the particular one or more high variation quadrants that cannot be estimated by a contractive map of the image (refer for example to column 14, lines 22-41).

As to claim 34, Barnsley ('600) measuring the gray scale variation in each quadrant so that each quadrant is either a low variation quadrant or a high variation quadrant and replacing any low variation quadrants with an estimate for the particular quadrant (refer for example to column 19, line 66 through column 20, line 13).

With regard to claim 36, Barnsley ('600) describes wherein the image having the gray scale values comprises an intensity image component of a color image (refer for example to column 19, lines 44-49).

In regard to claim 37, Barnsley ('600) describes wherein the gray scale variation in each quadrant is measured using the statistical variance of the gray values in the particular quadrant (refer for example to column 32, lines 31-43).

With regard to claim 38, Barnsley ('600) describes wherein the estimate of the particular low variation quadrant comprises the statistical mean of the gray scale values in the particular quadrant (refer for example to column 32, lines 31-43, the average pixel value in Barnsley is the equivalent of applicant's statistical mean of the gray scale values).

In regard to claim 39, Barnsley ('600) describes wherein the contractive map comprises applying a two-by-two spatial summing filter (see figure 9 and refer for example to column 11, line 24 through column 12, line 59, this portion of the Barnsley reference discusses a two-by-two block comparator which calculates a distance between pixel points, this "Manhattan" distance comparison is equivalent to applicant's spatial summing filter).

In regard to claim 40, Barnsley ('600) describes wherein the high variation quadrant is estimated using a scalar multiple of the contractive map of the image (refer for example to column 20, lines 14-41).

6. Claim 25 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jose L. Couso whose telephone number is (571) 272-7388. The examiner can normally be reached on Monday through Friday from 6:30 to 3:00.

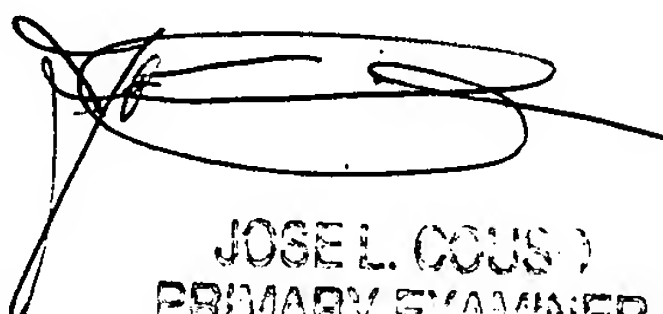
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Mancuso, can be reached on (703) 272-7695. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the USPTO contact Center whose telephone number is (703) 308-4357.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jlc

October 15, 2005



JOSE L. COUSO
PRIMARY EXAMINER